Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): A metropolitan area packet network, comprising:

a first ring for transporting packets in a clockwise direction;

a second ring for transporting packets in a counter-clockwise direction;

a plurality of network nodes coupled to the first ring and the second ring;

a detector residing within each of the network nodes which detects a failure in a segment of either of the first ring and second ring and broadcasts a failure condition signal to the plurality of network nodes; and

a switch-over circuit residing within ~~one~~ each of the network nodes;

wherein a switch-over circuit within a network node of data packet insertion ~~which~~ switches data packets from one ring ~~having a detected failed segment~~ to another ring in response to the failure condition signal.

Claim 2 (Currently Amended): The metropolitan area network of Claim 1, wherein a network node from where a data packet originates performs a switch-over ~~when the failure is detected~~in response to the failure condition signal.

Claim 3 (Currently Amended): The metropolitan area network of Claim 1, wherein a network node accepts a data packet from the first ring and transfers the data packet out on the second ring in response to the failure condition signal.

Claim 4 (Original): The metropolitan area network of Claim 1, wherein the first ring and the second ring comprise a bi-directional flow-switched ring.

Claim 5 (Original): The metropolitan area network of Claim 1, wherein data packets are routed on a per-flow basis.

Claim 6 (Original): The metropolitan area network of Claim 1, wherein data packets are switched over from one ring to another ring in response as a function of congestion on a particular ring segment.

Claim 7 (Original): The metropolitan area network of Claim 1, wherein different degrees of protection are enabled.

Claim 8 (Currently Amended): The metropolitan ~~are~~ area network of Claim 1, wherein the network node is configured to redirect a unicast packet on a per destination basis. ~~flow having a destination before a failed node is not redirected by keeping the flow in the first ring and a unicast flow having a destination after a failed node is protected by redirecting that flow onto the second ring.~~

Claim 9 (Currently Amended): The metropolitan area network of Claim 1, wherein a network node is configured to:

redirect a multicast packet on a per destination basis; and ~~flow is redirected by:~~

~~keeping the multicast flow on the first ring if all destinations occur before a failed node;~~

~~redirecting the multicast flow onto the second ring if all destinations occur after the failed node;~~

~~keeping the multicast flow on the first ring and copying~~ direct a copy of the multicast flow onto the second ring if destinations occur both before and behind the ~~failed node~~ segment failure.

Claim 10 (Original): The metropolitan area network of Claim 1, wherein at least one of the network nodes performs packet bleeding to prevent out-of-order packet arrival at a destination node when flows are restored back to their primary ring.

Claim 11 (Currently Amended): In a network having at least two packet rings and a plurality of switching devices coupled to the two packet rings, a method of transmitting packets between the switching devices, comprising the steps of:

transmitting packets in a clockwise direction in a first ring;

transmitting packets in a counter-clockwise direction in a second ring;

detecting when a failure has occurred in a segment of either of the first ring or the second ring;

broadcasting a failure condition signal to the plurality of switching devices; and

switching a packet at a point of insertion to an operational ring in response to ~~detection of the failure~~the failure condition signal.

Claim 12 (Currently Amended): The method of Claim 11 further comprising the step of the switching device immediately switching an originating packet to the operational ring ~~when the failure is detected~~in response to the failure condition signal.

Claim 13 (Currently Amended): The method of Claim 11 further comprising the steps of:

accepting the packet from an upstream switching device;

transferring the packet from the first ring for output on the second ring in response to ~~a failure detected on the first ring~~the failure condition signal.

Claim 14 (Original): The method of Claim 12, wherein the first ring and the second ring comprise a bi-directional flow-switched ring.

Claim 15 (Original): The method of Claim 11, wherein data packets are routed on a per-flow basis.

Claim 16 (Original): The method of Claim 11, wherein data packets are switched over from one ring to another ring in response as a function of congestion on a particular ring segment.

Claim 17 (Original): The method of Claim 11, wherein different degrees of protection are enabled.

Claim 18 (Currently Amended): The method of Claim 11 further comprising the steps of:

keeping ~~the~~ a unicast flow in the first ring;

redirecting a unicast flow having a destination after ~~the~~ a failed node by redirecting that flow onto the second ring.

Claim 19 (Original): The method of Claim 11 further comprising the step of re-directing a multicast flow:

keeping the multicast flow on the first ring if all destinations occur before a failed node;

redirecting the multicast flow onto the second ring if all destinations occur after the failed node;

keeping the multicast flow on the first ring and copying the multicast flow onto the second ring if destinations occur both before and behind the failed node.

Claim 20 (Original): The method of Claim 11 further comprising the step of performing packet bleeding to prevent out-of-order packet arrivals at a destination node when flows are restored back to their primary ring.

Claim 21 (Currently Amended): A metropolitan area packet network, comprising:

a fiber optic ring for transporting packets, wherein the fiber ring comprises a plurality of lambdas;

a plurality of network nodes coupled to the fiber optic ring;

a detector residing within each of the nodes for detecting a failure and broadcasting a failure condition signal to the plurality of lambdas; and

a switch residing within ~~one~~ each of the network nodes;

wherein a switch within a network node of data packet insertion ~~which~~ redirects data packets from a first lambda to a second lambda ~~if a failure corresponding to the first lambda is detected~~in response to the failure condition signal.

Claim 22 (New): The metropolitan area network of Claim 1, wherein the plurality of network nodes further comprise:

at least one input port module which accepts an incoming flow and classifies each incoming flow with a classifier circuit; and

a separate switch-over circuit coupled to each input port module.

Claim 23 (New): The metropolitan area network of Claim 22, wherein the plurality of network nodes further comprise:

a separate buffer for each incoming flow that queues the incoming flow data.

Claim 24 (New): The metropolitan area network of Claim 23, wherein the plurality of network nodes further comprise:

a rate controller configured to vary an output data rate of the separate buffer.

Claim 25 (New): The metropolitan area network of Claim 22, wherein the plurality of network nodes further comprise:

an output data buffer configured to queue and rate shape an output data.